



Integrating climate change adaptation into public health practice: Using adaptive management to increase adaptive capacity and build resilience

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Abstract:

Background: Climate change is expected to have a range of health impacts, and some are already apparent. Public health adaptation is imperative but there has been little discussion of how to increase adaptive capacity and resilience in public health systems. **Objectives:** To explore possible explanations for the relative lack of work on adaptive capacity, outline climate-health challenges that may lie outside public health's coping range, and consider changes in practice that could increase public health's adaptive capacity. **Methods:** We conducted a substantive, interdisciplinary literature review focused on climate change adaptation in public health, social learning, and management of socio-economic systems exhibiting dynamic complexity. **Discussion:** There are two competing views of how public health should engage climate change. Perspectives differ on whether climate change will primarily amplify existing hazards, requiring enhancement of existing public health functions, or present categorically distinct threats requiring innovative management strategies. In some contexts, distinctly climate sensitive health threats may overwhelm public health's adaptive capacity. Addressing these threats will require increased emphasis on institutional learning, innovative management strategies, and new and improved tools. Adaptive management, an iterative framework that embraces uncertainty, uses modeling, and integrates learning, may be a useful approach. We illustrate its application to extreme heat in an urban setting. **Conclusions:** Increasing public health capacity will be necessary for certain climate-health threats. Focusing efforts to increase adaptive capacity in specific areas, promoting institutional learning, embracing adaptive management, and developing tools to facilitate these processes are important priorities and can improve the resilience of local public health systems to climate change.

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Resource Description

Communication:

resource focus on research or methods on how to communicate or frame issues on climate change; surveys of attitudes, knowledge, beliefs about climate change

A focus of content

Communication Audience:

audience to whom the resource is directed

Policymaker

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Exposure :

weather or climate related pathway by which climate change affects health

Ecosystem Changes, Extreme Weather Event, Food/Water Security, Sea Level Rise, Temperature

Extreme Weather Event: Flooding

Temperature: Extreme Heat

Geographic Feature:

resource focuses on specific type of geography

Urban

Geographic Location:

resource focuses on specific location

Global or Unspecified

Health Impact:

specification of health effect or disease related to climate change exposure

Infectious Disease, Injury, Morbidity/Mortality, Other Health Impact

Infectious Disease: Foodborne/Waterborne Disease, General Infectious Disease

Foodborne/Waterborne Disease: Vibrios

Other Health Impact: heat related illness

Intervention:

strategy to prepare for or reduce the impact of climate change on health

A focus of content

Mitigation/Adaptation:

mitigation or adaptation strategy is a focus of resource

Adaptation

Resource Type:

format or standard characteristic of resource

Review

Resilience:

capacity of an individual, community, or institution to dynamically and effectively respond or adapt to shifting climate impact circumstances while continuing to function

A focus of content

Timescale:

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time period studied

Time Scale Unspecified